

WHAT IS CLAIMED IS

1. A method, comprising:  
receiving a sample of a signal being filtered;  
identifying a bias associated with the sample, the bias comprising a cushion and an increment; and  
outputting an expected value for a prior sample of the signal being filtered combined with a portion of the bias, the portion of the bias based at least partially on a size of the cushion.
2. The method of Claim 1, wherein:  
the cushion in the bias is based at least partially on the prior sample of the signal and the expected value for the prior sample; and  
the increment in the bias is based at least partially on a difference between (1) an actual change between the samples and (2) an expected change between the samples.

3. The method of Claim 1, wherein outputting the expected value of the prior sample combined with the portion of the bias comprises:

identifying a weight associated with the bias; and

dividing the bias by the weight to identify the portion of the bias to be combined with the expected value of the prior sample.

4. The method of Claim 3, wherein identifying the weight comprises:

identifying a larger weight when the increment is relatively large compared to the cushion; and

identifying a smaller weight when the cushion is relatively large compared to the increment.

5. The method of Claim 4, wherein:

the weight is larger when the signal being filtered has an inconsistent signal direction; and

the weight is smaller when the signal being filtered has a consistent signal direction.

6. The method of Claim 3, wherein:

identifying the weight comprises identifying the weight using one of elliptical weighting and diamond weighting;

the elliptical weighting and the diamond weighting are associated with a first maximum value along an axis representing the increment and a second maximum value along an axis representing the cushion, the first maximum value larger than the second maximum value.

7. The method of Claim 6, wherein:

the first maximum value lies between three and ten; and

the second maximum value lies between 0.75 and one.

8. The method of Claim 1, further comprising identifying a bias associated with the prior sample, the bias associated with the prior sample comprising a cushion of zero and an increment representing the entire bias associated with the prior sample.

9. The method of Claim 1, wherein identifying the expected value for the prior sample comprises identifying the expected value using a model.

10. An apparatus, comprising:

an input operable to receive a signal; and

a filter operable to filter the signal by:

identifying a bias associated with a sample of the signal, the bias comprising a cushion and an increment; and

outputting an expected value for a prior sample of the signal combined with a portion of the bias, the portion of the bias based at least partially on a size of the cushion.

11. The apparatus of Claim 10, wherein:

the cushion in the bias is based at least partially on the prior sample of the signal and the expected value for the prior sample; and

the increment in the bias is based at least partially on a difference between (1) an actual change between the samples and (2) an expected change between the samples.

12. The apparatus of Claim 10, wherein the filter is operable to output the expected value of the prior sample combined with the portion of the bias by:

identifying a weight associated with the bias; and

dividing the bias by the weight to identify the portion of the bias to be combined with the expected value of the prior sample.

13. The apparatus of Claim 12, wherein:

the weight is larger when the signal being filtered has an inconsistent signal direction; and

the weight is smaller when the signal being filtered has a consistent signal direction.

14. The apparatus of Claim 12, wherein:

the filter is operable to identify the weight using one of elliptical weighting and diamond weighting;

the elliptical weighting and the diamond weighting are associated with a first maximum value along an axis representing the increment and a second maximum value along an axis representing the cushion;

the first maximum value lies between three and ten; and

the second maximum value lies between 0.75 and one.

15. The apparatus of Claim 10, wherein the filter is further operable to identify a bias associated with the prior sample, the bias associated with the prior sample comprising a cushion of zero and an increment representing the entire bias associated with the prior sample.

16. The apparatus of Claim 10, wherein the filter comprises a processor.

17. A computer program embodied on a computer readable medium and operable to be executed by a processor, the computer program comprising computer readable program code for:

receiving a sample of a signal being filtered;

identifying a bias associated with the sample, the bias comprising a cushion and an increment; and

outputting an expected value for a prior sample of the signal being filtered combined with a portion of the bias, the portion of the bias based at least partially on a size of the cushion.

18. The computer program of Claim 17, wherein:

the cushion in the bias is based at least partially on the prior sample of the signal and the expected value for the prior sample; and

the increment in the bias is based at least partially on a difference between (1) an actual change between the samples and (2) an expected change between the samples.

19. The computer program of Claim 17, wherein the computer readable program code for outputting the expected value of the prior sample combined with the portion of the bias comprises computer readable program code for:

identifying a weight associated with the bias; and

dividing the bias by the weight to identify the portion of the bias to be combined with the expected value of the prior sample.

20. The computer program of Claim 19, wherein:

the weight is larger when the signal being filtered has an inconsistent signal direction; and

the weight is smaller when the signal being filtered has a consistent signal direction.



21. The computer program of Claim 19, wherein:

the computer readable program code for identifying the weight comprises computer readable program code for identifying the weight using one of elliptical weighting and diamond weighting;

the elliptical weighting and the diamond weighting are associated with a first maximum value along an axis representing the increment and a second maximum value along an axis representing the cushion;

the first maximum value lies between three and ten; and

the second maximum value lies between 0.75 and one.

22. The computer program of Claim 17, further comprising computer readable program code for identifying a bias associated with the prior sample, the bias associated with the prior sample comprising a cushion of zero and an increment representing the entire bias associated with the prior sample.